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(54) ROOM TEMPERATURE-SETTING COMPOSITION

(57)Abstract:

PROBLEM TO BE SOLVED: To obtain a room temperature-setting composition which contains an organic polymer having at least one reactive silicon-containing group as the main component and has a sufficient adhesiveness even to the steel plate coated with an acrylic resin or with a fluororesin by an electrophoretic deposition process, or to the cured product of a sealant such as a silicone sealant.

SOLUTION: This room temperature-setting composition comprises (A) 100 pts. mass of an organic polymer which has at least one silicon-containing group, has a hydroxyl group or a hydrolyzable group bonding to the silicon, and can crosslink by forming a siloxane bond, (B) 1–50 pts. mass of an epoxy resin, (C) 0.1–30 pts. mass of an exazolidine compound, (D) a silanol condensation catalyst, and (E) an amine promoter.

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2**** shows the word which can not be translated. 3.In the drawings, any words are not translated.

CLAIMS

[Chim 1](A) Organic polymer 100 mass part which has a hydroxyl group or a hydrolytic basis conflicted with a sileon entire, and has less a meaning and the sileon entire group which are construct a hidge by forming a alloane hour! (B) A convertempenture-curing nature constituent containing on to apport results of mass part, bit (C) casoolidine compound 0.1 - 30 mass part, at (C) alland on the compound 0.1 - 30 mass part, bit (C) alland on the compound 0.1 - 30 mass part, bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) alland on the compound of 0.1 - 30 mass part bit (C) allan [Claim(s)]

condensation catalyst, and (5) aritim system or catalyst.

(Colan 2)(7) (1)2-ethylation catalyst, and (5) aritim system or catalysts.

(Colan 2)(7) (1)2-ethylation is cataly (2) (1) are non-temperature-uning nature constituent containing at at least one cazalidate or beautiers from a group within consists of a mixture or at aleast one cazalidate or braides are called the catalysts. monoisocyanate according to olaim 1.

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DETAILED DESCRIPTION

Detailed Description of the Invention]

[Fige] of the breating III is intention relates to the rome-transparture-curing transcriberd such that constituent which receive afficient adherive property since to the hardened nativities of research, such as a steel battle in which need to explore the relating funded referring due, were given, and silicone series sealant in more deball about a room-temperature-curing testure constituent.

Description of the Prior Art[The organic polymer which has from the formor the hydroxyl group or Description of the Prior Art[The organic polymer which has from that the structure alone charter again to a side of the following "seather which will be a side of the prior of the p

American be absoluted by the inventional the invention case at the non-inventional transfers the cereminoobsyment (it may be caulied the following "organic polymer which has a reactive allicon group") which obsyment can be caulied the following and the background provide the reactive allicon group. The which shares constituent which reveals administrate shopers to property also to the fundament and the constituent and the property also to the fundament and the constituent of the fundament and allicons series assulted.

Blease for Soloing the Poblect This investigent has a before group or a pulsolybe basic considered Blease for Soloing the Poblect This is not the property of the pulsolibe the pulsolibe the consideration of the soloing the soloing the pulsolibe the pulsolibe the pulsolibe the pulsolibe the matrix consideration containing on the open years of mass part the (0) oxizoliding consorting the matrix the (0) Bleaded condensation the experts and the pulsolibe to the pulsolibe to (0005) it is preferred to contain is it least on oxizolidate ring breakes excellented reform from a (0005) it is preferred to contain is it least on oxizolidate ring breakes excellented reform from a

group which consists of a mixture or an addition of (F) (1/2-ethylnexanole acid, (2) ORUTOGI acid ester and (3) ORUTOGI acid ester, and a p-roblamesulfonic-acid monoisocyamite. [006] [Embodiment of the invention[Below, this invention is explained in detail (A) organicity polymer used

[Embodiment of the Invention]Below, this invention is equilibred in othal! (A) organicity polymer used for the novel-temperature-units nature constituent of this invention, it is a polymer which does not contain abstantially earlow-earlon instituted bonds other than an arematic ring, and it has a reactive alloon group, i.e., the hydroxyl group combined with the silicon storn, or a hydrolytic basis.

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JP,2002-020458,A [DETAILED DESCRIPTION]

and has at least one silicon content group which can construct a bridge by forming a silexane bond. [0007]07. The polymer used as the skalaton of an organic polymer is obtained by the following methods: for axemple.

(2008](1) A way carbon numbers, such as ethylene, propylene, 1-butene, and isobutylene, polymerize

definition constraint after mining deep service, such as butdeen and isoperar, homopolymentics of being compounded of 1 - 8 as mining deep service, such as butdeen and isoperar, homopolymentics or proprege cut exposprecations of the shown-mentioned off-info compound and the diene service. [0005] is preferred that it is the industrient sport may be not to finish the butdeen service may be not to finish the service of the number of end entired in young into an end among the best polyment which are servy to furnished young the finish that we servy to furnishe you be furnished young the service of the polyment which are servy to stronking the service of the polyment which are servy to stronking the polyment which are servy to control as

medicative weight, experiment to be formed on including any of the control of the

(DII) As used a copolymer component for compile 1-buttens, 2-buttens, A.2-methyl-Hebstens, a 3-buttens, A.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, B.2-buttens, A.2-buttens, A.2-buttens, B.2-buttens, B.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, A.2-buttens, B.2-buttens, B.2-b

there may be constructed between the monomeric unit used as the much ingredients like the case of an isobackees operating objects which is which of which is which is which of which is which of which is which of which is which the limits in which of which is which is which which which which which which which is which is which which is which by which is equally being the project is being the project of which is a deadle band remains all find a polymentatical like polyses compounds, such monomery with by which is deadle band remains all find a polymentatical like polyses compounds, such

0013]in a hydrogenation polybutadiene system polymer or other organic polymers, other monomeric

adhesive property of the constituent obtained will improve.

as butedene and isopreno, in the range bebow I mass & profronby.
[D015]MO betweethealmy, the reactive alloon group of an organic polymer is publishy known
[D016]MO betweethealmy, the reactive alloon group of an organic polymer is a publishy known
[D016] and the following formula I as the example of representation, [D016]

Formula 1]

(0017) the incise of a formula, R1, and R²—each—the alsolg group of the centron markers 1–20. The approach of the carbon numbers 1–20. The displaying the carbon numbers 1–20. The (RP), 3500—10. The analysis group of the carbon numbers 1–20, and these R²—may be the summary numbers 1–20, and these R²—may be the summary numbers 1–20, and these R²—may be the summary numbers 1–20, and these R²—may be the summ or may differ. X conceases I hydroxyl group or a hydrodylasia, when it is 0, 1, and 2, pieces [0018].

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0019]q which can be bolled and set does not need to be the same, r is an intager of 0, or 1-19. The nais shown is mertloned,

Additionable is an extransistant in the formula. I. Specifically, as to achieve a subsidiary introduction basis, associatly the indexloyed basis in the formula. I. Specifically, a hydrogen stems an efforcy group, an expression young, and TOSISI must are sure a mainle group, an amindroop group, a subsidiary group, an alterative young, etc., are illustrated satisfiely Expecially, it is a methory group, allifying group, and service you etc., are illustrated satisfiely Expecially, it is a methory group and alterative specially preferrably from the point with easy handling about hydrolysis nature having a mild slowy group.

0021This bydrobytic basis and hydroxyl group can be combined with one silicon about in the 1-3 mages, and as for (requ.), it is protriced that it is the range of 1-5. Whan a hydrolytic basis and a vydroxy lacuncy bits together in I two or more I a reactive silicon group, they may be the same or may

onsol.

The number of silicon atoms which form this reactive silicon group may be one, they may be two or more pieces, and are following formulas especially. [0023]

ormula 3]

[0004](R² X, and p are the same as the above among a formula.) — the reactive silicon group shown — acquisition — since it is easy, it is desirable.

Exposition maren it assyr, to sensure.

(1025)11-Foractive silcon groups exist preferably in [at least one] ann molecule of sn organic (1025)11-Foractive silcon groups exist preferably in [at least one] and molecule becomes difficult to seed an adensive property in least than olde project. The molecule becomes difficult to seed an adensive property in least than olde project.

(1025)11-reactive existence allocor propure vacific this control of the chain of (A) captaiday polymer, may solicit the side, and may oxist is both. When especially a restrictive allocor propu profits in an advantage of the chain of the

1000201 line reachers allecon group line yealst in the end of the reacher allecon group line yealst line on the dreated the reachers allecon group in the yealst line in the reacher allecon group exists in a monoid-cular transfer allecon group exists in a monoid-cular trained, since the color for the reacher allecon group exists in a monoid-cular trained, since the greatest which and every fine or gain for the original form composition to the reacher allecon group exists in a monoid-cular fine the reacher allecon group exists in a monoid-cular fine trained and the reacher allecon groups are considered to the reacher all the reacher

(IQC2)The ambies everegg meloudus veight of the core sector. Incore control mand may be used from points are fine the control to con

detail to UPH8-41360.A.Specifically as a (A) organicity polymer explained above, it is the following romals 21002]. Formula 41 2002

Formula 4

one 4 C_{AB} C_{AB}

oots [One], ore one outs

Convicigition (make by Koneak Corp.) (in end n are indicated to be to the integer of 0, or 1–20 and 1 (Convicigition) (make by Koneak Corp.) (in end n are indicated to the convicigity of the convicigities of the convicigities of the convicigity of the convicigities of the convicient of the convicigities of the convicient of the convicient of the convicion of the convicient of the convicient of the convicion of the convicient of the convici

0002]The (B) epoxy realn used for this invention is an epoxy propolymer which is not handened http://www.st.pd.inpit.go.jp/ogi-bin/tran.wob.cgi.giji?atov.sehttpX3A%257QFwww.sb.ind... 2010/04/30

nto the OH radical or the sulfhydryl group of the end.

JP.2002-020458,A [DETAILED DESCRIPTION]

which has an average of once in more overage proses in Infermedicular. A housey valed not are apoxy prices of international refers to a value which before the sum total of a molecular redget of an processor suit by the sum total of a weight per processor such total or an expension of a molecular redget of the behavior which the sum total or sum of the processor such as the processor of a molecular interpretation. The processor is the processor of the molecular and are processor of the processor of the molecular and are processor of the proce

A polywide modified every relaw which uses as a mind notice a polymerial charged exclusion and following formathr (Cp. II, OC)I₂, OC, I₂(C), I₂(C), I₃(C), I₄(C), I

(0033)-type consoline, e.g. we mentioned to prepared by a dehydrating condensation reaction with (0033)-type-consoline, on an official can be prepared by a dehydrating condensation reaction with histocontent) of consoline. Zidoropothy consoline, Zidoropothy objects of the prepared by the properties of consoline. Zidoropothy consoline, Zidorop

Comula 5]

EKRESZARA EKRESZARA EKRESZARA AFRYUSZ (1) ZESZUSZ (2) ZESZUSZ (3)

ヒドロキンアルキル ヒドロキンアルキル オキサゾリジン (4) オキサゾリジン (5) [0037]Oxzoole'ine aliyother Above-mantioned N-hydroxyalkyl oxzoolidine, Trimethoxyallane, a tetramethoxy allane, frathoxyallane, It is obtained by a restolent with alloxyallane, such as directhoxy directly/allane, vinyferimetoxyallane, and prefer the present alloxyallane, and an alloxyallane, and an alloxyallane, and a second a second and a second a http://www4.ipdl.inpit.go.jp/cgi-bin/tran_web_cgi_ejje?atw_u=http%3A%2F%2Fwww4.ipdli... 2010/04/30

gamma-głycidoxy propyłtriethoxyallane. By making a titanium alkoxide, aluminum alkoxide, or divalent Sn into a cetalyst, this reaction is 40 ** - 160 **, and is especially performed at 80 ** - 140 **

0038]The example of exacelidine ailylather is shown below. Formula 63

オキサゾリジンシリルエーテル (1)

オキサンリシンシリルエーテル(3)

sloohol, such as a diethylene glycol and glycerin. 60-160 ** of this reaction is preferably performed at comperature of the range of 100-140 **, for example under existence of transesterification catalysts, he hydroxyalkyl oxazolidine (1) above-mentioned [carbonate oxazolidine] for example, It can obtain JP,H5-117252,A, for example are mentioned. Hydroxyalkyl oxazolidine and diaryl carbonate, such as by making carbonate, such as dimethyl carbonate and dipropylene carbonate, react using polyhydric such as sodium methylate. As for an addition of a catalyst, it is preferred that it is 50-1000 ppm to 0039]Carbonate oxazolidine etc. from which cerbonate oxezolidine is obtained by a method of 0040] in this way, carbonate oxazolidine prepared is expressed with the following formula 3. the total quantity of hydroxyalkyl oxazolidine, carbonate, and polyhydric alcohol.

numbers independently raspectively.) R⁸ and R⁷ ere a hydrogen atom or an organic group of 1-8 (n is an integer of 1–10 among a formula, and \mathbb{R}^4 and \mathbb{R}^5 are the organic groups of 1–8 carbon carbon numbers independently respectively.

The following carbonate exazelidine (1) is among one example of a compound expressed with the

[0042]Ae ester oxazolidina, various ester oxazolidina auch as ester oxazolidina che obtained by the method of the US.8661923.B gazetes and the US.41884518 gazete, can be used for example. For example, for example, for example, for the other of above mentioned hydroxyaliky to sommice. カーボギートギギサンロジン (1)

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JP,2002-020458.A [DETAILED DESCRIPTION]

oxazolidine (1), dicarboxylic acid, or polycarboxylic acid. Specifically, the following ester oxazolidina (1) is mentioned. Commercial items, such as the hardener OZ by a Beyer company shown by the following ester oxazolidine (2), can elso be used.

in one molecule by reacting N-hydroxyalkyl oxazolidine and the polylaocyanate compound which are expressed with the following formula 4.

pranched chain of the carbon numbers 2-3, for example, shows an alkylene group, an alkenylone 0046]R⁸ is a divalent aliphatic hydrocarbon group which has the straight chain shape or the

atom or the carbon numbers 1-20 independently respectively. N-hydroxyalkyl oxazolidine expressed group, and alkynylene group here. ${\rm R}^9$ and ${
m R}^{10}$ show the univalent hydrocarbon group of a hydrogen with the above-mentioned formula 4 is compounded by a mathod more publicly known than corresponding eldshyde or ketone, and N-hydroxy elkylamine.

0047]As aldehyde, formaldahyda, acetaldehyde, propionaldehyda, Butylaldehyde, isobutyraldehyde, a Benzaldehyde, Methylbenzaldehyde, trimethyl benzaldehyda, ethylbenzaldehyde, Aromatic aldehyde 🛚 methylpentylaldehyde, Aliphatic aldehyde, such as octyl eldehyde end 3,5,5-trimethylhexylaldehyde; methyl ethyl ketone, methyl propyl ketone. Methyl isopropyl ketone, a diethyl ketone, methyl butyl dimethoxybenzaldehyde and trimethoxy benzaldehyde,]; etc. are preferred. As ketone, acetone. ketone, methyl isobutyl ketone, methyl-t-butyl ketone, diisobutyl ketone, cyolopentanone such as isopropylbenzaldchyde, isobutylbenzaldehyde, methoxy benzaldehyde, and valeraldehyde, 2-mathylbutylaldehyde, 3-methylbutyleidehyde, hexylaldehyde, 2-

(0050]Aa for reaction temperature, it is desirable in solventa, auch as toluene and xylane, to carry out ander flowing-back conditions. As for reaction time, it is desirable to conaider it as 6 to 24 hours, and quantity of nitrogen corresponding to the number of mols of aldehyde or ketone, it is preferred to use because separation with output is difficult for N-hydroxy alkylamine with this unreacted Reason, and 0048]As N-hydroxy alkylamine, bis-N-(2-hydroxyethyl) amine, bis-N-(2-hydroxypropyl) amine, and N-(2-Trydroxyethyl)-N-(2-Hydroxypropyl) amine are preferred. [0049]Although above-mentioned aldehyde or ketone, and hydroxy alkylamine react with this molar aldehyde or ketone superfluously in 1.01-1.5. It is the range of 1.01-1.1 especially preferably. It is t becomes a cause of a fall of atorage stability in order to react to an isocyanate.

evelohexanone, etc. are preferred.

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rexamethylene di-isocyanate (HDI), quantify three times under existence of a catalyst, and making an polyhydric alcohol classes, such as glycerin, hexanetriol, trimethylolpropane, or a polypropylene glycol The Para Feni range isocyanate, tolylene dilsocyanate, totramethylene di-isocyanate. Hexamethylene socyanurate ring form. On the occasion of a reaction with N-hydroxyalkyl oxazolidine of the formula t is desirable to consider it as 8 to 12 hours especially. A Reason for having made reaction time into these polyisocyanate compounds can be used alone and two or more sorts may be used together. 0051]A polyisocyanate compound is an organic group polyisocyanate which it has, and For example, sto., Or it can obtain by making discoyanate compounds, such as tetramethylene dirisooyanate and liphenylmethane disocyanate, A resultant with isophorone disocyanate, such denaturation articles, compounded by making a polyisocyanate compound react to N-hydroxyalkyl oxazolidine expressed mperfact and exceeds 24 hours. It is preferred to perform a reaction in the usual atmosphere. Nnydroxyalkyl oxazolidine which distills off under decompression of superflueus aldehyde or katone, this range is that a reaction mixture will color in less than 6 hours if it is because the reaction is with the formula 4 under ordinary pressure with reaction temperature of 50 ** - about 100 **. 0052]An oxazolidine compound which has three or more oxazolidinc rings in one molecule is il-isooyanate, xylenediisocyanate, ootadecyl diisocyanate, Naphthalene diisocyanate, 4, 4'-Solvents, such as toluene and xylene, may be used in order to lower viscosity in the case of and is expressed with the above-mentioned formula 4 after ending reaction is obtained.

20083]A quantitative ratio of N-hydroxyalkyl oxazolidine and a polyleocyanata compound is good for a polyleocyanata compound to make it react at 1 mol per 1 mol of hydroxyl of N-hydroxyalkyl 0054]As an example of a compound of having three or mora oxazolidine rings, the polyfunctional

exezolidine compound (1), (2) expressed with a following formula is mentioned to such one molecule.

ゆね稿メキサンリジン内包物(2)

[0056]As other examples of an isocyanate exazolidine compound, the compound expressed with the following formula 5 can be shown. [0057]

is 2 or 3. The hardened material which was able to balance tensile strength and a tensile pace of expansion especially as n is 2 or 3 is obtained. If 3 is exceeded, it will become it is hard and weak, and with a carbon numbers of one or more alkyl group, an alicyclic alkyl group of the carbon numbers 5-7, desirable -- the alkylene group of the carbon number 2 -- it is . R^{12} and R^{13} are a hydrogen atom, a skeleton of disocyanate or tri-isocyanate compound, n is an integer of 1-4 and it is preferred that it just form the skeleton of an isocyanate compound. It is preferred that it is a compound used as the [0058]here -- R¹¹ -- the carbon numbers 2-6 -- desirable -- the carbon numbers 2-3 -- more -or an aryl group of the carbon numbers 6-10 independently, respectively. As for R¹⁴, it is preferred alkylene group of the carbon numbers 2-6 including a urethane bond, or a urethane bond, and is the 0059]R¹⁵ is a basis obtained by removing an isocyanate group from n polyisocyanates, and should that it is an aryl group including the alkylene group of the carbon numbers 2-6, an aryl group, the alkyl group or aryl group of the carbon numbers 1-5 which has a urethane bond. 0060]As the example of an isocyanate oxazolidine compound, [Formula 13] pardening will become insufficient if it is less than two.

にソツアネートメキサンロジン内信袖(1)

アンシア サート ギサヤンコ ジン 行信報 (2)

.0061]Other examples with a preferred isocyanate exazolidine compound are the following formulas 6. Polyfunctional oxazolidine, such as which TDI base, a MDI base, a XDI base, and a HDI base, etc. are mentioned, and commercial itama, such as the Bayern hardener OZ, can be used.

polyisocyanate except for an isocyanate group as for five or more aliphatic hydrocarbon groups with a number of carbon atoms, and ${\sf R}^{17}$ are the integers of 0–4 among a formula.) — it is an oxazolidine (as for R¹⁶, the integer of 1-6 and n of the residue and m which are obtained from organic

quick in aliphatic hydrocarbon, and atorage stability is bad. Hydrolysis is slow in R¹⁶ being an aromatic carbon atoms preferably among the above-mentioned formula, For example, n-pentyl, 2-methylpentyl, 9062]As for R16, five or more carbon atom numbers are an aliphatic hydrocarbon group with 5-15 stoms is preferred. And subatttuent of hydrolysis of a position of R¹⁶ is [both substituents] too dodecanyl, n-tridaca nil, n-tetradeca nil, etc. are mentioned. Eapecially, a case with 5-10 carbon 3-methylpentyl, 3,5,5-trimethyl pentyl, n-heptyl, n-octyl, n-nonyl, n-deca nil, n-undecanyl, nnttp://www4.ipdl.inpit.go.jp/cgi-bin/tran_web_ogi_ejje?atw_u=http%3A%2F%2Fwww4.ipdli... 2010/04/30

nttp://www4.ipdl.inpit.go.jp/ogi-bin/tran_web_ogi_ejje?atw_u=http%3A%2F%2Fwww4.ipdli... 2010/04/30

group, and hardenability is bad. Hydrolysis is comparatively quick in the number of carbon atoms at four or less, and storage statelliff is bad. Hydrough there are some which inclase a compound etc. the case, and storage statelliff is bad though there are some number of the compound conventionally, there

where RVB is an aging group, with 1-6 carbon stoms as an oxazoldine compound conventionally, there as a set ar of recognizing a difference in an effect as a latent ouring agant by the difference in a carbon number within the limits of this concretely.

Self-grid may be an experience of the properties of the properties

0064]As for m. it is professed an integer of 1–6 and that it is 2–3 especially in respect of 1004]As for m. it is preferred an integer of 1–6 and that it is preferred an integer of 1–4 and that it is P ceepocially in respect of hardenability.

U-4 and thir it is U-2 espocially in respect or in arranamies (1006S)A manufacturing method or in a isocyanate oxazolidine compound shown by the formula 5 compounds N-hydroxydelyl oxazolidine shown with the following formula 7 from ** diethanolamine

and corresponding aldehyde, [Formula 15]

18. ... The first note oneme calculate investment with a surface of certain cuttors more of betterfield.

[1006] at N. for no come can equalistic investments of proper certain the obstitution of the obtained of considerable obstitutions of the obstitution of the obsti

"I-hydroxycety oxaziolele sid oglip to pisologistic, is of "y" et als inner to resure or oxy vivous." I enperior the proposition seld of the proposition and oblinate of the proposition and p

reso mendenced, and it is ausables as commercial famili is such oldebyle. It is such soften to recommend in the compound it is a such in the first of the compound in the compound as inconsistent of the compound in the compound as inconsistent in the compound as inconsistent in the compound in the comp

denaturation, or spocyanurate denaturation polyspocyanate is mentioned, and it is used as one sort or two extra ornore of subcombination. [0.069]An isosywate oxzzolidne compound torduzed by making it above has the characteristic of being able to adjust physical proporties variously.

(0070)Other examples with a preferred ingredient (C) are outstallers abletter For example, it is consumed the byte response to the constraint of the constra

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JP,2002-020458,A [DETAILED DESCRIPTION]

[0071]As for such oxazolidine silylether, it is preferred that it is a compound shown with the following

H²-SI-(CH²⁰-N)
H² SI-(CH²⁰-N)
H² SI-(CH²⁰-N)

n is an integer of 0-3 among a formula.

[0072] An affort group in which R¹⁸ has a hydrogen atom and number of carbon above 1-12 pieces. An allocopy lay, the property property property and property proper

(1007)34e for PB's its preferred as a sidel prous of the centron number 2 or all out the up-are an erboll upon and in increase (1007)34e for PB's. It is preferred that they are independent of the upon and increase (1007)34e for PB's. It is preferred that they are independent of the order or methy group, PB's and PB's are the hydrocentron groups and investigate them or the carbon numbers. In dependent of the order or the carbon numbers. All independently groups and in secondly (10 that they are 5° 17 carbon numbers) and professional for an inscriptly (10 that they are 5° 17 carbon numbers) and associately interesting group, and it privering groups and inscriptly groups and the privering groups are inscribed und it is preferred that one of PE's and then PB's a hydrogen atom expectable in miscondent and its preferred that the order per supplies and inclinated to be with a failboring formula are mentioned.

Formula

JP.2002-020458,A [DETAILED DESCRIPTION]

オキサンリジンシリルエーテル代金物 (1)

Brows-foot-con-

オキサンリジンシリルエーテル化合物 (2)

オキサンリジンシリルエーテル化合物 (3)

オキサゾリジンシリルエーテル化合物 (4)

[0076] [Formula 18]

ナキセンコンソツリガリードラ行会を (5) N-2400)-S-√SH

オキサンリシンシリルエーテル名名物(8)

Brows (conjust)

[007]TThe oxazolidine compound furthermore suitably used as an ingredient (C) of this invention is a compound shown with the following formula 9. オキサンロジンショルエーテル行合物(7)

Formula 19]

[0078]R²⁴ is an aliphatic hydrocarbon group which has with a carbon numbers of one or more straight chain drape or benniched chain, for example, shows an allof group, an allottel group, and an allohene group here. R²² and R²² show the hydrocarbon group of a hydrogen stom or the carbon numbers 1—30 highestedently respectively. These desirable examples are shown below. (10078)

Formula 20]

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constituent of this invention is 1 - 80 mass part to (B) epoxy resin 100 mass part, and it is preferred that it is 5 - 40 mass part. Physical properties or hardenability of an organic polymer are not spoiled 0081]The room-temperature-curing nature constituent of this invention shows the Reason for 0080]The content of the (C) exazolidine compound in the room-temperature-curing nature

uitable spead. Thus, since the balance of hardoning of (A) organicity polymer and the (B) epoxy resin s preferred, the adhesion manifestation nature of the room-temperature-curing netura constituent of excelling in adhesion manifestation neture. In the room-temperature-curing nature constituent of this (B) epoxy rasin by an imino group is not necessarily quick under a room temperature, when the hardenability under the room temperature of (A) organicity polymer is taken into consideration, it is a he state where (A) organicity polymer and the (B) epoxy resin are distributing hardens, an adhesive inder existence of humidity (water), the imine group reacts to the epoxy group which the (B) epoxy esin has, and the (C) exazolidine compound stiffens the (B) epoxy resin. Although hardening of the invention, when the (B) epoxy resin which both separated gradually and was mainly separated from property is revealed. On the other hand, hydrolysis generates an imino group and a hydroxyl group

0082]The (D) silanol condensation catalyst used for a room-temperature-curing nature constituent sster, Organic tin compounds, such as dibutyl tin diacetyl acetonato, eluminum tris acetylacetonato, acetylacetonato; load octylate is mentioned. These may be used independently and may use two or Chelate compound, such as organoaluminium compound; zirconium tetra acetylacetonato, such as of this invention, For example, titanate system coupling agents, such as tetrabuthyl titanate and dibutyitin discetate. Tin octylete, naphthenic soid tin, a reactant of dibutyl tin oxide and phthalic sluminumbrisethylacetoacetate and diisopropoxy aluminum ethylacetoacetate, and titanium tetra etrepropyl titanate; Tin carboxylete. for example, dibutyltin dilaurate, dibutyltin maleate, and his invention becomes the outstanding thing.

constituent of this invention, it is preferred that it is 0.1 - 20 mass part to (A) organicity polymer 100 0083]As for content of the (D) siland condensation catalyst in a room-temperature-curing nature working life under a room temperature, and balance of the hardening characteristic in it being this mass part, and it is more preferred that it is 1 - 10 mass part. It becomes what was excellent in

(0084)(E) amine system co-catalyst used for a room-temperature-curing nature constituent of this rivention, For example, a butylamine, octylamine, lauryl amine, dibutyl amine. Monoethanolamine, diethanolamine, triethanolamine, Diethylanotriamine, triethylenetetramine, oleylamine, diethanolamine, triethylenetetramine, oleylamine, Syclohexylamine, benzylamine, diathylamino propylamine, Xytylone diamine, triethylenediamine,

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JP.2002-020458,A [DETAILED DESCRIPTION]

(0087]2-ethylhexanoic acid is known as a ring breakage accelerator of an oxazolidine ring, and can be nethylmorpholine, 2-ethyl-4-methylimidszole, Amins compounds, such as the 1,8-diazabioyolo (5.4.0) constituent of this invention, it is preferred that it is 0.01 - 5 mass part to (A) organicity polymer 100 weight-polyamide resin obtained from superfluous polyamine and polybasic acid is mentioned. These oxazolidine compound is promoted, and the hardenability of the (B) epoxy resin improves remarkably undecene 7 (DBU), and these amine compounds, and a sait with carboxylic ecid ato; low-molecularaccelerator chosen from a group which consists of a mixture or an addition of ORUTOGI acid ester 0086]A room-temperature-curing nature constituent of this invention may contain a cross linking agent, a bulking agent, a plasticizer, stabilizer, colorant, etc. if needed, in order to adjust viscosity, mass part, and it is more preferred that it is 0.1 - 5 mass part. It becomes what was excellent in athylhexanoic acid especially, (2) It is preferred to contain at least one oxazolidine ring breakage oxazolidine ring breakage accelerators, ring opening reaction of an oxazolidine ring of the (C) [0085] As for contant of (E) amine system co-catalyst in a room-temperature-curing nature and (3) ORUTOGI acid ester, and a p-toluenesulfonic-acid monoiscoyanate. With these (F) physical properties, etc. in addition to the above-mentioned essential ingredient. (F) (1)2guanidine, dipheny/guanidine, 2,4,6-tris(dimethyl aminomethyl) phenol, morpholine, Npalance of the hardening characteristic with working life in it being this range. may be used independently end may use two or more sorts together. conveniently used also in this invention.

0088]ORUTOGI acid ester is a compound exprassed with the following formula 13. Formula 21 e e

[0090]Atthough a p-toluenesulfonic-acid monoiscoyanate is a compound expressed with the following synthetic method by Hofmann degradation, it can use commercial items, such as additive Ti by the Sumitomo Beyor urethane company. The ORUTOGI acid ester which is mixed with a p-[0083]R²⁷, R²⁸, and R²⁹ express an alkyl group or an aryl group here. Methyl orthoformate, ethyl orthoformate, etc. can be illustrated as ORUTOGI acid ester. By hydrolyzing, ORUTOGI acid ester supplies acid and, thereby, can act as a catalyst of the ring opening reaction of an oxazolidine ring. formula 14, and phosgene can be used for it or it can obtain it with a publicly known isocyanate

colucnesulfonic-acid monoisocyanate, or is made to add can use the same thing as a case where it

uses by independent [which was mentioned above].

[0092] As for the content of (F) exazelidine ring breakage accelerator in the reem-temperature-curing nature constituent of this invention, it is preferred that it is 0.1 - 100 mass part to (C) exazolidine compound 100 mass part, and it is more preferred that it is 1 - 50 mass part. Desirable hardened naterial nature is obtained with it being this range.

[0095]A plasticizer is not limited especially if it dissolves with (A) organicity polymer with process oil or other hydrocarbon, and it is [plasticizer] usable in various kinds of publicly known plasticizers. For acrylonitrile methacrylonitrile resin belloon, etc. are mentioned, and it is independent, or can be mixed [0094]a bulking agent -- fumed sillca and calcium carbonate (precipitated calcium carbonate.) Heavy calcium carbonate and a thing which carried out the surface treatment of these with fatty acid, resin aoid, or fatty aoid eator, Carbon black, day, tak, titanium oxide, quicklime, kaolin, zeolite, diatomaceous earth, VCM/PVC paste resin, glass balloons, a virylidene-chloride-resin balloon, an 0093]The ingredient which may be added when required in addition to the (F) ingredient used suitably for the essential ingredient of this invention and this invention is illustrated below.

example, dibutyl phthalets, diheptylphthalete, di(2-ethylhexyl) phthalete, Phthalic estor, such as

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state accident and and only pithally but they glocated; bodyed picture. Note wormen disable and state accident and as discuss the control of the problem of the picture of the discussion of the picture of

for example. As for colorant, a titanium white, carbon bleck, and red ocher are mentioned, for

[009]/A) organiday polymer whose roun-temperature-roung texts on calculated in this consistion of security and extended and extended and extended by consisting compound and extended and extended by consisting compound activities unless of CFD cancillation register, and extended by consisting compound activities and extended by consisting consistent and the other additive search. As the consistent of the contradition of the consistent of the contradition of the consistent of the contradition of the contradition of the theorem of the contradition of the contradi

(i) (0)The room-tempereture-suring nature conscibuons of this invention can also use a primor perfect in the case of these and a more outstanding editesive property can be made to reveal. Since thing containing an amino group confeat, silane coupling agent is excellent in adhesion manifestation thing containing an amino group confeat, silane coupling agent is excellent in adhesion manifestation.

(1010) As animo goud contexts illumin couping agent specifically. A conventionally publicly brown (1010) As animo goud contexts illumin couping agent specifically. A conventional main reminoscropy context in the context in the sun interpretation good so the usual for example, attent e-unimoscropy interpretations/allenia, gamma-eminoscropy (retribotoglassia, gamma-eminoscropy) (retribotoglassia, gamma-eminoscropy) (retribotoglassia, gamma-eminoscropy) and produce and context in the context interpretation of the

propyl propylemethoxyalane, gamme-anilino propylemethoxyaliane N-phenyl-gamme-aminopropyl "interboxyalane, etc. are membrined. These may be used independently and may use together these two or more softs.

[0102] [Example]Atthough working example is given to below and this invention is explained more concretely.

this invention is not filting to following worked geample. Sidering mixed in finited in following the distribution was carried to that lets the sold with the best sense of the index of the properties of the sold of the sense of the sold of the so

when which has a component #4(A) regardly polymer 9 Bil oligemen; EPIONEGES, The process oil of the found works which has been component #4(A) regardly polymer 9 Bil oligemen; EPIONEGES, The process oil of the found of the works of the found of the everyory-resinficionest RES, oil recovery shell chamicals company make. The wealth per company make is building agantificity would processing calculus on-house. Coll file 20, it is detected only make the found of the found of the PCSL plenting to each of the processing calculus on-house. Only file 20, it is detected only make the found of the process of the PCSL plenting to each of the processing the product make by AIOUS, and chamical component #4(O) considering component #4(O) consi

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JP.2002-020458,A [DETAILED DESCRIPTION]

condensation compares are centresed only and effective the The Indensor QC + e (10) sideon condensation coulders the part services are centresed only and formation that the territorial evil and the condensation could not be a considered that the territorial evil and include the condensation of the territorial evil and the condensation could not be the territorial condensation of the territorial condensation could not the territorial condensation condensati

Table 1]

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	-	۲	H-	¥	_	Н	100	يخ

[0104]Staring mixing of the material shown below in Greeparation of a primar composition) was sarried out by the quantitative ratio shown in the 2nd table, and the primer compositions A and B were prepared.

Organic solvent #n r-housune #s toluene (2) allicone rethin: (1) Poly, solvy instrume, *440-2148 Shinthermied No., Line hale (3) mining topo contror it silve coupling separticly Chitzmannichthol. garma-artheringospy intractions/silve, A1120 the (lippon Unior curing catalyst (4): Transet. TPTrething to Selds of Lat. It has (6) it sustantisely deprocation system polymer. P The process of of its oligoner, EPO(01103; the Kannel Con., make, the weight serving miceiular weight Stolk and 2 oligoner, EPO(01103; the Kannel Con., make, the weight serving miceiular weight Stolk and 2

mass % is contained. [0105] [Table 2]

	7518-A	プライマーB
ローヘキリン トライドン 大型製金素 中国自分素 ツリコーン薬剤	9 0 1 0 2 2 7	00
研げる場	4	2.

(0108)Culture acamination) The obtained primer commention A no B ware appoint to the surface of the "the Subject of BELFOOT A caldered an abunium plate, the glass plate the sortion electropainting steel plate, the fluorist control steel short, and the allicone series resident branched electropainting steel plate, the fluorist control should short and the allicone series resident branched and steel steel should be a subject to the subject of the supplies of the adherencies and neighboring it for 90 minutes, auch noom-temperature currier fluorise constituent was http://www4.ipdl.inpit.go.jp/cgi~bin/tran_web_cgi_ejje?atw_u=http%3A%2F%2Fwww4.ipdl.i... 2010/04/30

ask and about a not informer in the about on be about and are not theight (50 at 20 are for three day and (of these day are profession and their and are properly assuming the character and their and are properly assuming to the character and in the character an

0108] Table 3]

(C) oxazolidine compound does not reveal sufficient adhesive property.

0/0 0/0 0/0 0/0 0/0 0/0 0/0 8 æ 0/0 0/0 0/x 0/0 0/0 0/0 0/0 0/0 ∢ 0/0 ×/0 4 比較例 × **ツンコーンボツールント級方能** アクリル転者類板 おく数以数 アルミニウム板 室温硬化性粗底物 プライマー部政権 フッ素株付額板 ガラス板

Effect of the Invention The room-temperature-ouning nature constituent of this invention reveals authorized the Invention of the Invention authorized advances property taken to the hardened material of sealant; and as a difficulty adhesive property steel plats in which sorgic electropainting, fluoride paint, etc., were performed, and alleone series sealant.

[Translation done.]